

## **REMARKS:**

### **Status of the Claims**

Currently, claims 22-37 and 39-48 are pending in the application. Claims 22, 42, 43 and 47 are independent claims. Claim 22, along with dependent claims 23-37, constitutes a first claim set. Claim 42, along with dependent claims 39-41, constitutes a second claim set. Claim 43, along with dependent claims 44-46, constitutes a third claim set. Claim 47, along with dependent claim 48, constitutes a fourth claim set.

### **Claim Objections**

Claims 22 and 42 are objected to because these claim contain informalities. Applicants have amended the claims to correct the informalities.

### **Claim Rejections – 35 U.S.C. 102**

Claims 22-23, 25-36 and 42-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Drury et al. For the reasons set forth below, Applicants respectfully submit that these claims are not anticipated by Drury. Thus, reconsideration of the rejections under 35 U.S.C. 102 is respectfully requested.

#### **Claims 22-23 and 25-36**

The preamble of claim 22 has been amended to clarify that the location management apparatus is functionally located in a mobile communication network, which is described in lines 2-12, page 11 of the present specification.

Claim 22 calls for, among other limitations,

- (a) a transportation location finder configured to identify a communication area where the transportation is situated, based on movement information obtained from a traffic control that manages an operation of a transportation system including the transportation on which the mobile station is carried; and
- (b) a paging control configured to, when a call for the mobile station comes, access the location information storage so as to find the communication area, where the

transportation is situated, determined by the transportation location finder and cause a paging signal transmitted within the communication area.

As to above limitation (a), the Examiner found in Drury that while traveling toward a destination, the in-vehicle system tracks an estimated location of the vehicle. (citing col. 9, lines 15-16). Please note that there is nothing in Drury that discloses or teaches the transportation location finder claimed in claim 22. The above portion of the specification simply indicates that the Drury vehicle has a GPS and monitors the location of the vehicle to see if the vehicle is following a calculated route.

In the present invention, the transportation location finder identifies a communication area where the transportation is situated. The communication area identified by the transportation location finder is for use in paging the mobile station as claimed in above limitation (b). Please note that the Drury vehicle identifies the location of the vehicle, not a communication area.

In the present invention, an identification of the communication area is an important operation in paging the mobile station because the present invention claims the location management apparatus which is functionally located in a mobile communication network or telephone network. On the other hand, the Drury server is located outside a telephone network and uses the telephone system to communication the vehicles. The Drury server does not need to concern about in what communication area the vehicle is situated. When it needs to communication with the vehicle, all it has to do is to call the vehicle. The server does not need to know the communication area in which the vehicle is situated.

Also, in the present invention, a communication area is identified, based on movement information obtained from a traffic control that manages an operation of a transportation system. In Drury, the location information is obtained from a built-in GPS signal receiver. Drury is silent about movement information obtained from a traffic control that manages an operation of a transportation system.

As to above limitation (b), there is no occasion at all that the Drury server receives a call to be forwarded to a vehicle. The Drury server is not a telephone server.

Also, as explained, when it calls a vehicle, Drury does not need to concern about in

which communication area the vehicle is situated. When it has to call the vehicle, Drury simply asks the telephone company to connect its call to the vehicle.

For the above reasons, claim 22 cannot be anticipated by Drury. Since claim 22 is not anticipated by Drury, neither are its dependent claims 23-37.

#### **Claim 42**

In the Office Action, claim 42 is rejected under 35 U.S.C. 102(e) as being anticipated by Drury et al. Claim 42 is directed to a mobile station and calls for, among other limitations,

- (a) a location signal receiver configured to.....receive an identification signal from a transportation which comprises an identification of the transportation;
- (b) a first registration control responsive, absence the identification signal, to the location signal to transmit to the wireless communication network a first registration request which comprises the identification of the communication area, whereby the mobile station becomes locatable with respect to the communication area; and
- (c) a second registration control responsive to the identification signal to disable the first registration control and transmit a second registration request which comprises the identification of the transportation, whereby the mobile station becomes locatable with respect to the transportation.

As to above limitation (a), the mobile station receives an identification signal from a transportation on which the mobile station is situated. The Drury vehicle does not receive any signal identifying the vehicle itself (it does need to because it is supposed to who it is).

As to above limitations (b) and (c), the mobile station of the present invention listens for (i) an identification signal from a transportation and (ii) a location signal from a mobile communication network. Absent the identification signal, the first registration control responds to the location signal and transmits the first registration request to the wireless communication network. When becoming aware of the identification signal coming in, the second registration control disables the first registration control and transmits the second registration request to the wireless communication network.

There is nothing in Drury that discloses or teaches any of these limitations (a), (b) and (c). Therefore, claim 42 is not anticipated by Drury and should be allowable.

#### **Claims 43-46**

In the Office Action, claim 43-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Drury et al. Claim 43 is directed to a location information provider and calls for:

- (a) a query receiver configured to receive an inquiry from a user asking a location of a mobile station;
- (b) a paging control responsive to the inquiry to cause the mobile station to be paged and receive location information of the mobile station from the mobile station; and
- (c) a transmitter configured to transmit to the user a response which comprises at least a part of the location information.

The Examiner determined that Drury discloses above limitation (a), citing col. 7, lines 17-22. Please note that the designated portion of Drury simply states that the vehicle sends destination information and current location information to the server. In Drury, an operator in the vehicle enters a destination into the vehicle system. (col. 7, lines 6-7). In Drury, no one is asking the server about the location of a mobile station.

The Examiner also determined that Drury discloses above limitation (b). In the present invention, when an inquiry is received from a user, the mobile station is paged. In response, the mobile station sends its location information up to the paging control. On the other hand, the Drury vehicle voluntarily sends its location information without being paged. As explained above, when an operator in the vehicle enters a destination into the vehicle system, the vehicle sends destination information and current location information to the server.

As to above limitation (c), the present invention notifies the user of the location of the mobile station. In Drury, no one is asking the location of the mobile station. Thus, there is no one to notify of the location of the mobile station.

For the reasons stated above, claim 43 is not anticipated by Drury. Since claim 43 should be allowable over Drury, its dependent claims 44-46 should also be allowable over Drury.

### **Claim Rejections – 35 U.S.C. 103**

Claims 24 and 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drury in view of Ushiki et al.

Claims 24 and 37 are dependent from claim 22. As explained above, Drury falls short of disclosing the limitations of claim 22. These missing limitations are not disclosed in Ushiki et al., either. Therefore, claims 24 and 37 should be allowable over Drury and Ushiki.

Claims 39-41 are dependent directly or indirectly from claim 42. As explained above, Drury falls short of disclosing the limitations of claim 42. These missing limitations are not disclosed in Ushiki et al. Therefore, claims 39-41 should be allowable over Drury and Ushiki.

Claims 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drury in view of Kinnunen et al.

Claim 47 is directed to a location information provider and calls for:

- (a) a query receiver configured to receive an inquiry from a user asking a location of a mobile station;
- (b) a memory that stores time schedules of transportations;
- (c) a location queryer responsive to the inquiry to find if the mobile station is situated on a transportation;
- (d) a location estimator configured to determine, if the mobile station is situated on a transportation, a future location of the mobile station by referring to the time schedules stored in the memory; and
- (e) a transmitter configured to transmit to the user a response which comprises the determined future location of the mobile station.

As to above limitation (a), as explained above, in Drury, no one asks the server about the location of a vehicle.

As to limitation (b), the memory of the present invention stores time schedules of multiple transportations. A time schedule means a schedule that shows where transportation is to be located at future times. The Examiner determined that Drury discloses the limitation, citing col. 7, lines 52-57. Please note that the designated portion of Drury discusses a calculated route to the destination and has nothing to do with a time schedule of transportation.

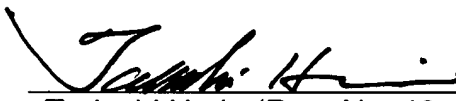
The Examiner also determined that Drury discloses above limitation (c), citing col. 9, lines 15-16. The designated portion of Drury states that while traveling toward the destination, the in-vehicle system tracks an estimated location of the vehicle. On the other hand, limitation (c) determines if the mobile station is situated on a transportation and it does not determine an estimated location of the vehicle.

The Examiner determines that Kinnunen discloses above limitation (d), citing col. 15, lines 54-65. The designated portion of Kinnunen states that since users may be able to foresee their future locations, this information can be provided to the network. In other words, if a user knows his future location, the user will provide the location information to the network. Please note in the present invention, no user notifies location information to the network. In the present invention, the location estimator determines a future location of the mobile station by referring to the time schedules.

For the reasons stated above, claim 47 should not be obvious over Drury and Kinnunen. Since claim 47 should be allowable over Drury and Kinnunen, its dependent claim 48 should also be allowable over the references.

Respectfully submitted,

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Date

  
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